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Receiving Social Support after Short-term Confinement: How Support Pre- and During-confinement Contribute

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Abstract

Objectives: To test the independent links between social support that exists prior to and during confinement with support after release for adult males incarcerated for an average of 11 months in the Netherlands. *Methods:* Longitudinal data from a large study on consequences of confinement, the Prison Project, are used to describe instrumental (live with) and expressive (core network) support before and after confinement from four sources (parent, partner, other family, friend) and during-confinement visits by the same groups. Multiequation models examine the contribution of preconfinement support and visits to postconfinement support, while also

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describing the interrelationship of support sources. *Results:* Preconfinement support is consistently related to receiving the same type after release. Receiving visits during confinement has a unique relationship with receiving postconfinement expressive support across all relational groups. Only visits from partners has an additional influence on instrumental support after release. Postconfinement support across provider groups is interrelated, with a positive correlation across providers for expressive support and a substitution effect for instrumental support between parents and partners. *Conclusions:* After controlling for important preconfinement differences in support, visits remain significantly related to postconfinement expressive support, suggesting a possible mechanism by which visits help improve reentry outcomes.

Keywords
social support, confinement, prison visit, instrumental support, expressive support

The importance of social support in criminological theories is long-standing. Building on social control theory (Hirschi 1969), Kornhauser (1978) suggested that social support is a vital mechanism for indirect external social control because the cost of violating norms is higher for persons with valuable relationships. Similarly, life-course theory emphasizes the quality of conventional bonds, implying they provide meaningful benefits (Sampson and Laub 1990, 1993). Cullen (1994) directly advocated for the use of a "social support paradigm" in criminology, highlighting two theoretically important types from the mental health literature (Lin 1986): *expressive* (emotional) and *instrumental* (practical or tangible). Today, its intersection with many criminological theories is widely recognized (e.g., Boman and Mowen 2018).

Social support is particularly relevant when studying the consequences of confinement. Support *during confinement* (calls, mail, visits) has been linked to lower institutional misconduct (Cochran 2012; Jiang and Winfree 2006; Siennick, Mears, and Bales 2013), concurrent (Liu, Baker, and Pickett 2016) and postrelease (La Vigne et al. 2005) perceptions of relationship quality, and expectations for future support (Meyers et al. 2017). Researchers suggest that social support is a potential mechanism through which prison visits may reduce recidivism (Bales and Mears 2008; Duwe and Clark 2013). Social support *during reentry* has been linked to lower drug

use, more employment (Brunton-Smith and McCarthy 2017), and reduced recidivism after jail (Spjeldnes et al. 2012) and prison (Barrick, Lattimore, and Visher 2014; Brunton-Smith and McCarthy 2017; Mowen and Visher 2015). Increasingly, informal social support networks have been identified as de facto reentry services for many leaving jails (Bobbitt and Nelson 2004; Comfort 2016) and prisons (Harding et al. 2014; Western et al. 2015).

Given the significant history of social support in criminological thought and its role in reentry, the scarcity of adequate empirical research on the development of social support around confinement is surprising. This gap is notable because an appreciation of the development of support during and after confinement is important for understanding theoretical mechanisms and germane to policy decisions, especially those seeking to improve reentry outcomes broadly. Deficits in the current empirical tests comprise four main areas.

First, only a handful of studies in this area have longitudinal designs with multiple waves (Barrick et al. 2014; Brunton-Smith and McCarthy 2017; La Vigne et al. 2005; Mowen and Visher 2015; Pettus-Davis et al. 2017; Wallace et al. 2016; see Table 1). Further, only two have pre-, during-, and postconfinement support measures (Brunton-Smith and McCarthy 2017; La Vigne et al. 2005). Measurement at multiple points is critical for understanding changes and the unique contribution of support at each point to later ones.

Second, most prior studies operationalize social support without distinguishing providers. Theoretically, relationships are a key component as social support "is not a property of individual or environment" but is comprised of transactions between persons (e.g., Vaux 1988:297; see also Antonucci 2001). Social support is comprised of specific actions provided by individuals with whom a person has a relationship. Further, social support theory proposes that the longevity and type of support will differ for ascribed (family), optional (friend), and blended (partner) relationships (Antonucci and Akiyama 1995). Friends typically provide short-term crisis intervention, while support for chronic needs is relegated to family (Antonucci and Akiyama 1995). Characterizations of social support in the quantitative criminological literature as broad-based phenomena fail to recognize the meaningful role of relationships over time in providing targeted, supportive actions.[1] To practically enhance access to support through policy, we must understand how concrete types of support operate through relationships that are available to detainees.

Third, a separate—but related—reason for the limited understanding of social support around confinement is that prior studies typically

Table 1. Longitudinal[a] Studies on Social Support and Confinement.

Author (Year)	Barrick et al. (2014)	Brunton-Smith and McCarthy (2017)	La Vigne et al. (2005)	Mowen and Visher (2015)	Pettus-Davis et al. (2017)	Wallace et al. (2016)
Sample (*N*, jurisdiction, description)	255; IA, IN, OH, OK, SC, WA; subset of SVORI[b] females who were from sites with incarceration data	2,617; England and Wales; subset of SPCR[c] male prisoners sentenced from six months to four years	233; IL; subset of RH[d] male prisoners returning to Chicago; mean prison stay 20 months	740; IL, OH, TX; subset of RH[d] male prisoners, who had three waves of data; mean prison stay > 3 years	479; AZ, PA; subset of pathways to desistance convicted emerging adults	550; 14 U.S. sites; subset of SVORI[b] males with W1 and W3 data who were not reincarcerated at W3
Data collection points	W1: 1 mo. prerelease; W2: 3 mo., W3: 9 mo., and W4: 15 mo. postrelease (combined W2–W4)	W1: prison reception; W2: two weeks prerelease; W3: generally two to five mo. postrelease	W1: one to three mo. prerelease; W2: two mo. postrelease; W3: six mo. postrelease	W1: one mo. prerelease; W2: one mo. postrelease; W3: six to nine mo. postrelease	W1: period that included incarceration; W2–W4: six mo. follow-up intervals	W1: one mo. prerelease; W3: nine mo. postrelease (use only W1 and W3)
Expressive social support measures	Pre: none; During: W1 family emotional support scale (10 items: e.g., feel close, talk to, turn to; reverse code items like criticize, fight); Post: W2–W4 mean family emotional support (same as W1)	Pre: W1 family attachment scale (4 items: close, want involved, emotional support from prisoner and from family); During: none; post: W3 family attachment scale (same as W1)	Pre: W1 Family Relationship Quality (FRQ) scale (11 item: e.g., talk to, spend time with, understood problems, advice); included partners;[e] During: none; Post: W3 FRQ (same as W1); W3 IPRQ (Intimate Partner Relationship Quality) scale (11 items: e.g., advice, significant role, well-being)	Pre: none; During: W1 Family support scale (e.g., close, involved); W1 Family conflict scale (3 items: e.g., fights a lot); Post: W2 and W3 family support and family conflict scales (same as W1)	Pre: none; During: Contact with Caring Adults (CCA) inventory; 8 item: mostly expressive oriented, e.g., talk to, admire, cares about); Post: CCA (mostly expressive)	Pre: none; During: W1 Positive Family Support scale (6 items: close, want involved, talk, turn to, understands, love); W1 Negative Family Support scale (3 items: fight, disappoint, criticize); post: W3 Positive Family Support scale (same as W1); W3 Negative Family Support scale (same as W1); W1–W3 change score on

(continued)

Table 1. (continued)

Author (Year)	Barrick et al. (2014)	Brunton-Smith and McCarthy (2017)	La Vigne et al. (2005)	Mowen and Visher (2015)	Pettus-Davis et al. (2017)	Wallace et al. (2016)
						both scales
Instrumental social support measures	Pre: none; During: none; Post: W2–W4 mean support (5 items: agreement that family would help with housing, job, SA problems, transport, income)	Pre: W1 living with family pre-prison (Y/N); During: none; Post: none	Pre: none; During: none; Post: W3 Family Tangible Support (FTS) scale (5 items: e.g., housing, job, SA problems, financial); included partners	Pre: none; During: none; Post: none	Pre: none; During: CCA (mostly expressive; instrumental item "depend on for help"); Post: CCA (mostly expressive)	Pre: none; During: none; Post: W3 dummy variables for living with: parent, partner, other family, children, other (alone = reference)
During-confinement visits/contacts	W1 visit, phone, mail (Y/N) by family and nonfamily; two scales for family and nonfamily summing the frequency of contacts across three types	W2 visit (Y/N) for parent, children, partners; overall frequency scale (0–6)	W1 visits, mail/phone from three types (partner, children, other family [most often mothers, sisters, aunts]) both Y/N and frequency scale (0–4)	None	None	W1 visit, phone, mail from family (0 = none, 1 = few, 2 = frequent)
Recidivism	Reincarceration (and time to) in five years follow-up	Reoffending (1 year and 2 years post)	None	Self-reported crime (Y/N: W2–W3)	None	None
Other outcomes	None	Class A drug use (W3); employment (W3)	W3 ATC (Attachment to Children) scale	Self-reported drug use (0/1 W1-3)	None	SF-12 Summary Mental Health Scale
Key findings regarding social support and contacts	During family contact related to post support (both emotional and instrumental); unique contribution	Change in family relations important for post outcomes, above and beyond prefamily relations; visits not significant	Support relatively high across waves (and is higher after release); contact during improves FRQ and FTS post (but not	Concurrent family relationships more important for predicting outcomes than prior ones; conflict tracks more	Family support greater than nonfamily; family support level similar during and immediately post, but declined across	Lag-DV (during MH) and current negative family relationships (perceived) are strongest related to current MH; no

(continued)

Table 1. (continued)

Author (Year)	Barrick et al. (2014)	Brunton-Smith and McCarthy (2017)	La Vigne et al. (2005)	Mowen and Visher (2015)	Pettus-Davis et al. (2017)	Wallace et al. (2016)
	of during contact to recidivism (family decreased; nonfamily increased), even when considering concurrent family support (which is also sig.)	directly on outcomes, but parent visits improved family attachment W1–W3	entirely consistent in terms of mode [e.g., visit, mail] or by visitor type [e.g., partner, family])	with drug use and crime than support does	post periods, especially for those with longer incarcerations; symbiotic interaction of support across family and nonfamily	effect of past relationships or contacts during prison or current "living with" variables
Limitations to understanding social support across time	No presupport measure; all family members together (includes spouse)	No instrumental support measure post; don't report on paths from pre live with or attachment to visits	Presupport was measured near release, so likely influenced by during experiences (including continued contact with family)	No presupport measure (during may be sort of a blend of pre/during); mostly perceived support items in scales	No presupport measure; all family members together; no tie to during contacts	No presupport measure (during may be sort of a blend of pre/during)

Note: DV = dependent variable; MH = mental health; W1–W4 = wave 1 to wave 4; mo. = month.

[a]For inclusion in the summary table, we selected studies that examined social support around periods of confinement and included three or more waves of data collection. However, as shown in this table, some of the analyses relevant to social support excluded or collapsed waves.

[b]SVORI: Serious and violent offender reentry initiative was a multistate intervention started in 2003 to assist high need prisoners with reentry. The study included comparison releasees. On average, the adult men had served an average of over two years, while the adult females had served an average under two years in prison (Lattimore and Visher 2009).

[c]SPCR: Surveying prisoner crime reduction survey "was a nationally representative longitudinal survey of 3,849 offenders sentenced to between one month and four years in prison in England and Wales" starting in 2005 and 2006 (Brunton-Smith and McCarthy 2017: 467).

[d]RH: Returning home began in 2001 and included official data and surveys/interviews of IL, OH, TX male (1,200), and TX female (250) prisoners before and after release to document their paths of reintegration (Visher 2007).

[e]The preconfinement social support measure in La Vigne et al. (2005) was collected in the one to three months prior to prison release. As such, although the scale (FRQ) asked about family relationships preprison, responses may have been affected by during-prison experiences as well.

operationalize social support as a composite concept. These measures are often a mix of types (instrumental and expressive). Moreover, support is often measured as a blend of perceived and received elements such as having someone who "*would* provide help or advice" on various matters (e.g., Barrick et al. 2014; emphasis ours). These shortcomings are not merely matters of measurement. Although overlapping, perceived and actual received support (i.e., enacted; Barrera 1986) are distinct concepts and visits during confinement may impact them differently (Meyers et al. 2017).

Fourth, the few studies examining social support around confinement primarily use U.S. prison data (an exception is Brunton-Smith and McCarthy [2017] who study prisoners in England and Wales). Internationally, this is a concern because the U.S. penal system is distinct in terms of excessive lengths of incarceration and a comparatively punitive approach to confinement (Dervan 2011; Subramanian and Shames 2013). The mechanisms for how support develops around periods of confinement spanning multiple years may be fundamentally different than those for shorter stays which are the norm in many parts of the world (Aebi et al. 2014). Preconfinement support may not have a strong relationship with postrelease support, while receiving support during incarceration may become even more important, when incarceration lasts several years. On the other hand, the punitive orientation of the U.S. system with its many barriers to maintenance of external relationships (Bobbitt and Nelson 2004; Christian 2005; Clark and Duwe 2017; Cochran et al. 2016; Dixey and Woodall 2012) may result in too low of a "dosage" of in-person visits[2] to observe a meaningful relationship between during-confinement support and postrelease support. U.S. jails have shorter confinement terms and potentially fewer barriers to maintaining external ties (e.g., shorter travel), but studies of support in this context are rare and primarily descriptive (Arditti, Lambert-Shute, and Joest 2003; Comfort 2016; Spjeldnes et al. 2012; Weisheit and Klofas 1989).

The present study examines social support around confinement and aims to overcome these four shortcomings. We build upon the extant criminological literature by narrowing, but deepening, the focus to specific actions of instrumental and expressive social support across time (before, during, and after confinement) and within relationships (from parents, partners, other family, and friends). We approach this task using data from the Prison Project, a longitudinal study of adult males in the Netherlands who experienced confinement in remand centers and penitentiaries (Dirkzwager et al. 2018). The context of the Netherlands prison system is important to note because it emphasizes maintenance of external ties more than the U.S.

(Subramanian and Shames 2013) or English systems (Kruttschnitt and Dirkzwager 2011). Furthermore, the majority of detainees in the Netherlands experience confinement of "only" several months, a length much shorter than is common in U.S. prisons. This context—that has similarities with, yet important distinctions from, the settings examined in past research—informs our expectations for how earlier social support will contribute to postrelease support.

Social Support and Confinement: Expectations and Prior Research

In this section, we present our expectations regarding the development of social support around periods of confinement based on the existing theoretical literature and report pertinent findings from the few relevant empirical studies. We focus especially on six papers we identified that were published in peer review journals since 2000 and included three or more waves of data collection, with measures of social support for at least two points (see Table 1).

Pre- and Postconfinement Social Support

Drawing from criminological and life-span literature, there is an expectation that social support will decrease from pre- to postconfinement. Moreover, the relationship between pre- and postconfinement support may be attenuated due to the intercepting confinement experience. By design, incarceration is isolating (Rothman 1971)—particularly in U.S. systems where institutional barriers and financial burdens of maintaining external social ties are well known (Braman 2004; Christian 2005; Christian, Mellow, and Thomas 2006; Clark and Duwe 2017; Cochran et al. 2016; Comfort 2009; Pleggenkuhle, Huebner, and Summers 2018). Emotional stress is another relevant barrier to external relationship maintenance that has been documented in U.S. (e.g., Comfort 2009) and U.K. prisons (e.g., Dixey and Woodall 2012; Hutton 2016) and U.S. jails (e.g., Arditti et al. 2003). These strains can even lead prisoners to refuse visits (Dixey and Woodall 2012; Pleggenkuhle et al. 2018), further knifing off potential support. Relatedly, the social expectations model from the life-span literature proposes that close relationships are "especially vulnerable at times of major life transitions, when support needs are heightened and expectations regarding the provision of support . . . are tested" (Levitt and Cici-Gokaltun 2011:467-68).

Confinement could easily be characterized as one of these transition periods where supportive relationships can be lost if expectations are unmet.

As the predictions from criminological literature are drawn primarily from longer-term confinement, it is possible that support would be less likely to be diminished during short-term stays. Typically, supportive relationships are characterized by ongoing interactions (Levitt and Cici-Gokaltun 2011), and therefore, briefer periods of confinement would allow a quicker and potentially more seamless return to supporting relationships. This supposition, however, is not sustained with the limited extant research describing short-term jail confinement. This literature characterizes even brief (but especially frequent) jail stays as costly and disruptive to social support and relationships (Comfort 2016; Maruna 2016; Weisheit and Klofas 1989). Jail inmates serving an average of under six months noted that family relationships, housing, and financial problems were common costs of short-term confinement, with the total number of costs not varying significantly by legal status (pre- or postsentence) or length of stay (Weisheit and Klofas 1989). Further, research on romantic relationships has found short-term confinement (of even a few months) to be damaging to partnerships (Apel et al. 2010; Siennick, Stewart, and Staff 2014; Wildeman, Turney, and Yi 2016).

Considering this literature, we formulate the general hypothesis that even relatively short periods of confinement will be associated with declines in social support. Additionally, because close relationships and expectations for support are based on the accumulation of past experiences (Levitt and Cici-Gokaltun 2011), we hypothesize that those who have support prior to confinement will be more likely to have it after.

The existing empirical literature, including the six longitudinal studies summarized in Table 1, does not provide overwhelming evidence concerning these two hypotheses. For changes in support from pre- to postconfinement, results are mixed with two studies finding changes in expressive support in both directions (Brunton-Smith and McCarthy 2017; Mowen and Visher 2016) and one reporting average increases (La Vigne et al. 2005). Volker and colleagues (2016) found that the number of individuals providing expressive support was similar from pre- to postconfinement, but family members were more likely to remain stable. This result is consistent with the convoy model of social support assertion that ascribed kin relationships have the most longevity (Antonucci and Akiyama 1995). Only one study directly examined the influence of preconfinement support on post, finding that greater expressive support before confinement was related to greater expressive and instrumental support during reentry in models that included

partner visits, but not family visits (La Vigne et al. 2005). In sum, the extant empirical literature does not clearly confirm the expectation that declines in support would be more common than gains, nor does it provide sufficient evidence on the impact of preconfinement support on support during reentry.

During- and Postconfinement Social Support

It is commonly expected in the criminological literature that in-person visitation is positively related to having postrelease social support—even after controlling for the influence of preconfinement support. The act of visiting a person, despite the aforementioned barriers, is assumed to be an additional contribution to the relationship. In fact, scholars argue that visits are not merely a reflection of continuity in support from prior to confinement (Bales and Mears 2008; Duwe and Clark 2013). Notably, the link between visits and postconfinement social support is not predicated on the assumption that visits are wholly positive or without conflict. Visits are known to be emotionally challenging (Arditti et al. 2003; Comfort 2009; Dixey and Woodall 2012; Hutton 2016; Pleggenkuhle et al. 2018). Nevertheless, recent research shows that even stressful visits include positive elements. Prisoners report feeling closer to visitors—even those classified as unsupportive (Meyers et al. 2017). Prisoners also note both positive (feel loved, comforted, supported) and negative (feel guilty, sad, stressed) emotions from visits (Turanovic and Tasca 2017). Similarly, social support theory expounds the ways in which close relationships are "primary sources of support" and also "frequent sources of negative interaction and conflict" (Levitt and & Cici-Gokaltun 2011:488).

Although the criminological literature suggests that social support during confinement, especially in-person visits, would contribute to postrelease support, the majority of this work examines the long-term confinement context and may not be directly applicable to understanding the mechanisms at play for short-term confinement. Convoy (Antonucci and Akiyama 1995) and social expectations (Levitt and Cici-Gokaltun 2011) models from the life-span and social support literature would suggest that visits during short-term confinement may not have as large of an impact on postconfinement support because supportive relationships are largely stable over time and draw from the accumulation of past interactions. From these perspectives, if the period of confinement is merely a blip over the long course of the relationship, receiving visits should not be critical for ongoing support. On the other hand, the social expectations model also accounts for the

vulnerability of supportive relationships during major life transitions where expectations for support are tested and providers may fail to deliver (Levitt and Cici-Gokaltun 2011). Even a brief period of confinement may constitute a major life transition: one in which support expectations may only be met if detainees receive ongoing contact and support from close relationships.

Based on these combined theoretical literatures, we hypothesize that contacts during short-term confinement will have a unique and positive relationship with postconfinement support—even after including adequate controls for preconfinement support. Additionally, beyond length of confinement, the correctional system's milieu should have implications for whether and how external support during confinement may impact postrelease support. During-confinement social support's impact on postrelease support should be especially noticeable in systems where maintenance of external social ties are emphasized through reentry-oriented policies. We hypothesize that the influence of during confinement support on postconfinement support will be significant and distinct from preconfinement support particularly in our study's correctional context. The Netherlands's penal system has been long recognized as rehabilitation and community oriented (Dervan 2011; Downes 1988; Kruttschnitt and Dirkzwager 2011; Subramanian and Shames 2013)—despite a recent punitive turn (Kruttschnitt and Dirkzwager 2011; Tonry and Bijleveld 2007). The Dutch emphasis on normalization means that "prisoners are encouraged to maintain and cultivate relationships . . . outside the prison walls" to improve reentry prospects (Subramanian and Shames 2013:7). Of all correctional environments, this should be one in which visits occur with sufficient frequency and are of high enough quality to contribute positively to future social support.

Unfortunately, adequate empirical tests of the direct relationship between during- and postconfinement support, net of preconfinement support, are lacking in any correctional contexts (see Table 1). One exception is a study using three distinct waves of data, where the authors found that parent visits predicted improved expressive support from pre- to postconfinement, but partner visits did not (Brunton-Smith and McCarthy 2017). Additional research is required to understand how support from both prior to and during confinement contributes to postrelease support, particularly in the context of short-term confinement.

Postconfinement Social Support Providers

Beyond support linking across time within relationships, a concurrent interrelationship between different support providers is expected. Although

support from any party may operate independently, there are good reasons to expect that providers may substitute for or complement each other. Because some types of instrumental support would only need to be provided once, we hypothesize that receiving instrumental support through one relationship will be related to lower likelihood of receiving it through another. For example, those living with parents after release will be less likely to concurrently live with partners, other family, or friends. Conversely, expressive support could be provided through many relationships, imparting cumulative benefits. It is common for both the general public (McPherson, Smith-Lovin, and Brashears 2006; Mollenhorst, Volker, and Flap 2014) and prisoners (Naser and La Vigne 2006; Volker et al. 2016) to mention emotionally supportive relationships with multiple persons if they have any at all. This implies a *social* aspect to social support. As such, we hypothesize that having expressive support through one relationship will be positively related to having it through others.

Empirical evidence on the interrelationship of support providers after confinement is almost nonexistent, with only one study in Table 1 examining this area. Pettus-Davis and colleagues (2017) found a substitution effect between family and nonfamily providers of support to young adults across multiple waves postconfinement. Their measure of support was blended—comprised primarily of expressive support elements (e.g., talk about trouble, important decisions; care about your feelings), but also some instrumental (e.g., depend on for help). The interaction of social support providers requires further exploration.

The Current Study

This study tests changes in social support from before to after a period of short-term confinement and examines the role of pre- and during-confinement support on postrelease support. The focus on short-term confinement is valuable as most empirical research in this area studies long-term prisoners in the United States and, therefore, is unable to test the theoretical mechanisms of social support for short-term confinement. We study the development of social support in the Netherlands using detailed longitudinal data from the Prison Project (Dirkzwager et al. 2018). Social support outside of confinement is measured in two theoretically relevant domains: Prison Project participants report on living with (instrumental support) and discussing important matters with (expressive support) parents, partners, other family members, and friends. Participants also report receipt of visits from these same parties during confinement. The

availability of three waves of data collection with precise measures allows for the examination of *who* provides *what* kind of support and *whether* contacts during confinement independently contribute to receiving postrelease support. We are uniquely able to test the following hypotheses based on expectations drawn from the theoretical and empirical literature on social support:

Hypothesis 1: Fewer individuals will have social support after release than before confinement.

Hypothesis 2: Individuals who have support before confinement will be more likely to have it after release.

Hypothesis 3: During-confinement support (visits) will be positively related to social support after release, even after controlling for support before confinement.

Hypothesis 4a: Individuals living with one provider group after release will be less likely to concurrently live with another (i.e., substitution effect for instrumental support).

Hypothesis 4b: Individuals discussing important matters with one provider group after release (core network) will be more likely to also discuss important matters with others (i.e., cumulative effect of expressive support).

In testing these hypotheses using data from the Netherlands, the findings will advance knowledge about social support during relatively short periods of confinement (by U.S. standards) that are common internationally (Aebi et al. 2014). Furthermore, we provide one of the first estimates of the relationship between visitation and postconfinement support (net of preconfinement support). Isolating the unique correlation between visits and postrelease support is a critical contribution. Past studies might have overestimated the contribution of prison visits on outcomes, as preexisting differences are related to who receives visits (Cochran, Mears, and Bales 2017; Connor and Tewksbury 2015). Studies have aimed to address this potential selection bias with advanced techniques (e.g., propensity score matching; Mears et al. 2012); however, these methods only control for bias on observables. Preconfinement support is rarely measured, yet is likely a key contributor to who is visited (e.g., Atkin-Plunk and Armstrong 2018). Additionally, our study contributes to the limited literature on the role of relationships and how support after confinement is interrelated across

providers by examining whether it operates in tandem or fluctuates independently (see Pettus-Davis et al. 2017).

Method

Data, Context, and Sample Selection

This study uses three waves of data from the Prison Project: a longitudinal, prospective cohort study examining the development of criminal behavior and other life circumstances of male prisoners in the Netherlands (Dirkzwager et al. 2018). The original target population consisted of Dutch-born males aged 18–65 who entered one of the 30 Dutch remand centers (which are roughly equivalent to pretrial detention in the United States) between October 2010 and April 2011. In total, 3,981 persons met the inclusion criteria and 2,837 (71 percent) were contacted. Most of those not approached were already released from custody before they could be contacted ($n = 865$). Of those contacted, 1,904 (67 percent) agreed to participate in the Prison Project. Initial interview participants (1,904) were largely representative of the target population on administrative data measures (Dirkzwager et al. 2018).

In the present study, we examine social support before, during, and after confinement. As such, we select a subsample from the Prison Project who participated in the baseline interview (P1; completed approximately three weeks after intake and covering the period immediately prior to the arrest that led to confinement), the second during-confinement interview (P2; completed approximately three months after intake and capturing measures of visitation), and the first postrelease interview (R1; completed approximately six months after release and covering the period of reentry up to that point). Consequently, the analytical sample is comprised of 476 individuals who participated in all three interviews.

The average total period of confinement for the analytical sample was about eleven months (Mean = 322 days in Table 2; range = 2.5 months to 3.5 years). Over 80 percent were sentenced to imprisonment, with most receiving sentences of up to 6 (28 percent) and 12 months (26 percent) and over 12 months (24 percent; not shown in Table 2). Except for length of confinement, our analytic sample with three waves of data ($n = 476$) is largely similar to those who participated in the P1 and R1 interviews ($n = 946$), who are, in part, quite similar to the Prison Project initial panel sample ($n = 1,904$) on observed P1 measures.[3] By design, this study's sample has a longer period of confinement than the Netherlands national average of four

Table 2. Descriptive Statistics.

Variable	Mean	Std. Dev.	Range
Demographics			
Age at intake (18–23 years old)	0.36	—	0–1
Age at intake (24–29 years old)	0.18	—	0–1
Age at intake (30+ years old)	0.46	—	0–1
Minority	0.31	—	0–1
Conventional social ties preconfinement			0–1
Religion[a]	0.45	—	0–1
Job/school	0.55	—	0–1
Children	0.45	—	0–1
Partner	0.54	—	0–1
Substance issues			0–1
Problem drug use[b]	0.28	—	0–1
Problem alcohol use[b]	0.16	—	0–1
Criminal record preconfinement			
Age at first offense	18.78	7.86	12–54
Offense count five years pre[c]	4.54	4.98	0–27
Mean offense severity five years pre[c]	3.17	2.46	0–15
Current offense: person	0.50	—	0–1
Current offense: property	0.23	—	0–1
Current offense: other	0.26	—	0–1
Confinement period			
Days in confinement	322	258	70–1288
In remand at P2[d]	0.78	—	0–1

Note: $N = 476$.

[a]The measure for religion came from the P1 questionnaire that was not returned for all P1 interview participants. To preserve sample size across analyses, a flag for missing religion information was included in the models for the 6 percent who didn't have questionnaire data.

[b]Problem use was indicated if it hindered activities, caused problems with family/friends, caused drastic decrease in important activities, or prevented respondent from thinking about anything else.

[c]Excludes the offense that resulted in The Prison Project confinement.

[d]Indication if participant was still in custody at a remand center at the time of the P2 interview at approximately three months postintake (=1) or transferred to a penitentiary (=0).

months, as all were still in custody for the P2 interview (see Wermink, Johnson et al. [2017] or Wermink, Nieuwbeerta et al. [2017] for additional descriptions of the Dutch confinement context). At the P2 interview, 78 percent of our sample were still in remand centers and 22 percent had been transferred to penitentiaries (analogous to U.S. prisons). We describe the demographic and preconfinement characteristics of the analytic sample in

Table 2. Most of the sample was under age 30 at intake, had a partner, and was employed (or going to school) at the time of arrest. On average, they had more than four additional offenses in the five years prior to the Prison Project confinement.

Individuals have the right to one hour of weekly visitation in both remand centers and penitentiaries in the Netherlands. These visits may include up to three visitors (with children under 16 often not counting). Remand centers and penitentiaries, which often share campuses, are distributed throughout the Netherlands and have visit rooms similar to those throughout Western nations. Most visit rooms are designed so those in custody sit on one side of a long counter (typically with a clear plexiglass divider of several inches on top), while visitors enter and sit on the other. Individuals also may receive mail, phone calls, and gifts (e.g., clothing, media) from outside contacts. Considering the system's resocialization focus (Subramanian and Shames 2013) with legally conferred weekly visits and the relatively compact geography of the Netherlands, the ability to observe links between visits and social support when on the outside may be better than in places where additional constraints impede this expression of support.

Measures

Pre- and postconfinement social support

General support. As a point of comparison with prior literature, we begin our measurement of pre- and postconfinement social support with general instrumental and expressive scale measures that are similar to the extant literature (see Table 1). General instrumental support is a summative scale (range = 0–3) of living with (=1 if living with parents, partners, other family, or friends), receiving income from (=1 if sources of income included "parents" or "others than parents"), and expecting to be able to borrow a small amount of cash from someone (=1 if answered yes to being able to borrow from any core network member, =0 if did not report being able to borrow cash or did not report social network members). The general expressive support scale (range = 0–3) comprised the following three items: (1) there are plenty of people I can rely on when I have problems, (2) there are many people I can trust completely, and (3) there are enough people I feel close to (each scored: no = 0, more or less = .5, and yes = 1).[4] A drawback of these general measures is that they do not allow us to track support across different relationships. Further, both are a blend of perceived and received support. We, therefore, construct and focus our main analyses

on the following pre- and postconfinement social support measures that address these issues and advance the study of social support received around periods of confinement.

Specific instrumental support received. We select living with parents, partners, other family,[5] or friends as the indicators of received instrumental social support. We combine information from interview items that documented participants' residential situation at their arrest before confinement (five items from P1) or since their release (four items from R1).[6] We select living with these parties as the key construct of received instrumental support for several reasons. Housing is one of the most pressing needs upon release regularly provided by family, partners, and friends (Harding et al. 2014; Western et al. 2015; Wyse, Harding, and Morenoff 2014). Stable homes allow persons to grow and invest in social relationships, school, work, and the community (Desmond 2016). Further, shared households are the setting for multiple forms of instrumental support, including food and transportation (Wyse et al. 2014), help with other expenses (e.g., cell phone; Western et al. 2015), and help with employment (Harding et al. 2014; Martinez and Christian 2009; Western et al. 2015). As such, living with someone represents a potential source of multiple types of instrumental support. Certainly, shared households may also be the setting for conflict and strained relationships. However, these challenges do not preclude the provision of valuable instrumental support.[7]

Specific expressive support received. We use information on whether a specific party was a part of the core discussion network as the indicator of receiving expressive social support. Following the prompt "Everyone sometimes needs someone to discuss important matters with. With whom did you discuss important personal matters . . . ?," respondents could indicate up to five persons. The recall frame was "during the 6 months prior to your arrest" at P1 and "in the past 6 months" for R1 (i.e., at the wave six month after release). Using the core discussion network directly captures the substance of emotional support that is often operationalized by asking whether respondents have someone to "talk to" or "turn to" (Barrick et al. 2014; La Vigne et al. 2005; Meyers et al. 2017; Pettus-Davis et al. 2017; Spjeldnes et al. 2012; Turanovic and Tasca 2017; Wallace et al. 2016). Members of core networks are often the main providers of support (McPherson et al. 2006; Volker et al. 2016), while listening has been theoretically linked with other supportive functions, "such as love, trust, intimacy, and attachment" (Vaux 1988:18). In follow-up items, respondents indicated their relationship to the persons in the core network, which was

used to denote the provider party (e.g., partner). Those not reporting any core network were considered to not have any of the four providers of expressive support.[8]

Combined support received. Lastly, we create two types of combined social support measures from the specific forms of support received pre- and postconfinement. First, we combine social support measures for each relational type by indicating if respondents *either* "lived with" or had them in their "core network." Second, we construct a set of across all group measures indicating if the respondent received that type of support (live with, core network, combined support) from *any* of the four sources. All received support measures are dichotomous: whether this form of support existed (=1) or not (=0).

During-confinement social support. Social support during confinement is measured by receipt of in-person visits (yes = 1, no = 0) from each of the four relational groups (as well as overall). We select visitation as the primary indicator of during-confinement social support because of the value placed on this event by detainees and visitors alike. Visits provide an opportunity for discussing important matters face-to-face (expressive support) and planning for future practical needs (e.g., housing; instrumental support). Using visitation to operationalize during-confinement support also allows us to extend the current literature on visitation and link support outside confinement to a meaningful act of during confinement support from specific relational groups. As previously noted, visits need not be entirely positive experiences to be supportive (Meyers et al. 2017). We include four additional measures of during-confinement social support: if detainees received phone calls, mail, money deposited into their commissary accounts, or gifts (e.g., clothing, CDs). These, however, were not collected at the relational level. A combined total during-confinement support variable was created by adding all types a detainee received (range = 0–5). All during-confinement social support measures refer to the approximately first three months of confinement across both types of facilities (remand and penitentiary).

Control variables. Control variables comprise five domains that could theoretically impact social support. To avoid biased estimates of the relationship between during- and postconfinement support, we include those variables that could plausibly affect receiving visits and postconfinement support. First, we include demographic measures: age (dummy variables for 18–23, 24–29, and 30+ years old) and minority status (Turkish, Moroccan,

Surinamese, Antillean, and other nonnative Dutch as minority). Second, we include three dummy variables of conventional social ties: whether respondents ascribed to a faith or religion (with a separate dummy indicator for the 6 percent of the sample who were missing data on this questionnaire item), had a job or school involvement at their arrest, or had children. Third, problem substance use in the year prior to confinement is included, with separate items for alcohol and drugs. Substance use is considered problematic if it hindered activities, caused problems with family/friends, caused drastic decrease in important activities, or prevented respondent from thinking about anything else. We use problem use, rather than any, because the Netherlands has more permissive substance use policies than the United States (Tonry and Bijleveld 2007). Fourth, we compile four official criminal record measures from the Judicial Documentation System: age at first offense (from age 12), a count of offenses in the five years prior to confinement (excluding the case that resulted in the Prison Project confinement), mean offense severity for these same cases (averaging the maximum statutory incarceration sentence in years, a typical proxy for severity; Wermink, Nieuwbeerta et al. 2017), and current offense type (person, property, and other [including public order, dui/traffic, drug, weapon]). Fifth, and finally, we include two confinement experience factors: days in confinement (summing time served in remand centers and penitentiaries) and if the respondent was still in the remand center at the P2 interview.

Analytic Strategy

We begin by examining general social support scales. Next, we test the relationship between specific types of social support received pre- and postconfinement using bivariate analyses (Hypotheses 1 and 2). We test the remaining hypotheses using four-equation multivariate probit models, running separate models for postconfinement instrumental, expressive, and combined support. In each multiequation probit model, we regress postconfinement support on during-confinement support (visits) after controlling for preconfinement support (lagged dependent variable [DV]) and control variables (Hypothesis 3). The lagged DV may represent some combination of the stability of social support, portions of prior impacts of measured variables, and effects of correlated unmeasured variables (Menard 2010). As such, including the lagged DV will result in a liberal estimate of the relationship between preconfinement support and postconfinement support but generate conservative estimates for other variables (including visits) (Menard 2010). The multiequation probit model is an extension of the

seemingly unrelated regression (SUR) framework for binary DVs (Cappellari and Jenkins 2003) and improves efficiency by taking the full covariance structure into account (Roodman 2011).

In this study, each multiequation model links four equations, one for each relational type, estimating the error correlations across equations. Equations (1)–(4) illustrate the model for combined support. Each equation includes an intercept, a dummy variable for whether a visit was received from that party, support preconfinement from that party, and a vector of controls (*X*s; all variables from Table 2, except having a partner).

$$\text{ParentSup}_{R1} = \beta_{10} + \beta_{11}\,\text{ParentVis} + \beta_{12}\,\text{ParentSup}_{P1} + X\beta_{13} + \varepsilon_{14}, \tag{1}$$

$$\text{PartnerSup}_{R1} = \beta_{20} + \beta_{21}\,\text{PartnerVis} + \beta_{22}\,\text{PartnerSup}_{P1} + X\beta_{23} + \varepsilon_{24}, \tag{2}$$

$$\text{OtherFamSup}_{R1} = \beta_{30} + \beta_{31}\,\text{OtherFamVis} + \beta_{32}\,\text{OtherFamSup}_{P1} + X\beta_{33} + \varepsilon_{34}, \tag{3}$$

$$\text{FriendSup}_{R1} = \beta_{40} + \beta_{41}\,\text{FriendVis} + \beta_{42}\,\text{FriendSup}_{P1} + X\beta_{43} + \varepsilon_{44}. \tag{4}$$

The SUR framework is important for testing our final hypotheses: It models relationship-specific support across time (within equation; Hypothesis 3), while simultaneously modeling the dynamics of postconfinement support across the four providers through cross-equation error correlations (Hypotheses 4a and b). For example, observing negative correlation between errors would suggest that support from one provider is a substitute for another. Of course, the errors need not be correlated and this would suggest independence of support from different sources.

Results

General Support

In line with earlier studies, we first examine general social support around confinement (see Tables 3 and 4). Testing our first hypothesis (Hypothesis 1), we see that general instrumental support (living with, receiving income from, and being able to borrow cash from others) was lower

Table 3. General Social Support Pre- and Postconfinement.

		Postconfinement				
				By During Support (Visits)		
Variable	Preconfinement	Overall	Sig.[a]	No	Yes	Sig.[b]
General instrumental ($n = 476$)	1.47 (0.83)	1.14 (0.77)	***	0.78 (0.64)	1.19 (0.77)	***
General expressive ($n = 461$)[c]	1.78 (1.04)	1.98 (1.02)	***	1.46 (1.12)	2.04 (1.00)	***

Note: Means and (standard deviations) reported.
[a]Statistical significance is reported from Wilcoxan signed-rank test. The null hypothesis is that median support is unchanged from pre- to postconfinement.
[b]Statistical significance is reported from two-sample *t* tests, comparing postconfinement support by visitation status (0/1).
[c]Sample restricted to participants in the P1 questionnaire ($n = 461$), as items were not asked in the P1 interview.
*$p < .05$.
**$p < .01$.
***$p < .001$.

postconfinement than preconfinement (Table 3).[9] This result is consistent with the direction of the first hypothesis (Hypothesis 1)—that support will decline from pre- to postconfinement. General expressive support (beliefs about having people to rely on, trust, or feel close to) was higher postconfinement (counter to Hypothesis 1; see also Table 3). We test our second (Hypothesis 2) and third (Hypothesis 3) hypotheses, linking earlier general support to later, in multivariate OLS models (see Table 4). These results are consistent with our second hypothesis (Hypothesis 2) that those with preconfinement support will be more likely to have it after—for both instrumental and expressive. However, after accounting for the significant influence of preconfinement support and additional relevant controls, visits were not significantly related to postconfinement support (models 4a and 4b)—a finding which is inconsistent with our third hypothesis (Hypothesis 3) on these general support measures.[10] Notably, visits were related to postconfinement instrumental and expressive support in bivariate tests (Table 3) and models with only partial controls (Table 4).

It should be stressed that using these general measures of social support precludes the study of relationships as an important mechanism through

Table 4. Postconfinement General Social Support OLS Models.

	General Instrumental Support											
	(1a) Bivariate			(2a) With Controls			(3a) With Lag Support			(4a) Full		
Variable	Coef.	*SE*	Sig.	Coef.	*SE*	Sig.	Coef.	*SE*	Sig.	Coef.	*SE*	Sig.
During support[a]	.404	.113	***	.314	.115	**	.255	.111	*	.200	.113	
Presupport[b]							.262	.041	***	.245	.044	***
Includes controls[c]				X						X		
N	476			476			476			476		
	General expressive support											
	(1b) Bivariate			(2b) With controls			(3b) With lag support			(4b) Full		
	Coef.	*SE*	Sig.	Coef.	*SE*	Sig.	Coef.	*SE*	Sig.	Coef.	*SE*	Sig.
During support[a]	.585	.153	***	.472	.156	**	.380	.154	*	.314	.158	
Presupport[b]							.226	.046	***	.205	.048	***
Includes controls[c]				X						X		
N[d]	461			461			461			461		

Note: Coef. = coefficient; *SE* = standard error; Sig. = statistical significance; X= indicates the model included controls. Controls were included in models 2 (a&b) and 4 (a&b).
[a]In all models, "during support" is operationalized as the receipt of any visits (0/1).
[b]Presupport variables are for lagged versions of the dependent variable for each equation.
[c]Whether equation included 16 additional controls covering demographics, preconfinement characteristics, criminal justice history, and confinement characteristics.
[d]Sample restricted to participants in the P1 questionnaire ($n = 461$), as items were not asked in the P1 interview.
*$p < .05$.
**$p < .01$.
***$p < .001$.

which support is provided. With these general support scales, we cannot link support outside of confinement to visits from the same groups (parents, partners, other family, friends), nor are we able to test our final hypotheses concerning the interrelationship of support providers. Moreover, the general support scales—as typically used in the literature—measure a blend of perceived and received elements and thus focus at least, in part, on

Table 5. Preconfinement Support and Postconfinement Support: Overall and by Preconfinement Support Status.

		Postconfinement				
				By Presupport Status		
Variable	Preconfinement	Overall	Sig.[a]	No	Yes	Sig.[b]
Parent						
Live with	.32	.24	***	.08	.58	***
Core network	.37	.29	**	.22	.41	***
Combined support[c]	.54	.44	***	.24	.61	***
Partner						
Live with	.31	.22	***	.09	.51	***
Core network	.37	.23	***	.10	.46	***
Combined support[c]	.46	.33	***	.12	.58	***
Other family						
Live with	.21	.17	*	.06	.60	***
Core network	.19	.20		.15	.45	***
Combined support[c]	.34	.33		.18	.62	***
Friend						
Live with	.05	.04		.03	.12	*
Core network	.33	.25	**	.19	.36	***
Combined support[c]	.35	.27	**	.20	.40	***
Across all groups[d]						
Live with	.67	.51	***	.21	.65	***
Core network	.78	.58	***	.42	.62	***
Combined support[c]	.88	.79	***	.51	.82	***

Note: $N = 476$.

[a]Statistical significance is reported from McNemar's test for paired samples. The null hypothesis is no disproportionate change in support status from pre- to postconfinement.

[b]Statistical significance is reported from χ^2 two-sample tests, comparing postconfinement support by preconfinement support status.

[c]Combined support is if either (or both) type of support is present.

[d]Across all groups indicates if any of the four groups provided that type of support.

*$p < .05$.

**$p < .01$.

***$p < .001$.

expectations of support. In the remainder of the Results section, we address these gaps by testing our hypotheses with measures of specific forms of instrumental and expressive support received from four important relationship types (see Tables 5–8).

Table 6. During-confinement Support: Overall and by Preconfinement Support Status.

		By Presupport Status		
Variable	Overall	No	Yes	Sig.[a]
Visits from				
Parent[b]	.61	.44	.75	***
Partner[b]	.45	.18	.77	***
Other family[b]	.53	.49	.62	**
Friend[b]	.60	.53	.72	***
Anyone	.89	.73	.91	***
Other support				
Phone calls	.97	.95	.97	
Mail	.85	.82	.86	
Money	.87	.75	.88	**
Gifts	.84	.75	.86	*
Total support types[c]	4.4 (1.1)	4.0 (1.5)	4.5 (1.0)	***

Note: $N = 476$.
[a]For dichotomous variables, statistical significance from χ^2 two-sample tests is reported. For the sum variable (total support types), statistical significance is presented from an independent samples *t* test.
[b]For each of these, the presupport measure is for receipt of support from that specific provider type in the preperiod. For the remaining variables, presupport is an overall measure of whether either type of support was provided by any party in the preconfinement period.
[c]This variable is a sum of all during support types (visit, phone, mail, money, gifts; range = 0–5); mean and (standard deviation) reported.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Pre- and Postconfinement Social Support

Fewer individuals received specific forms of support across most relational groups postconfinement—a pattern that is in line with our first hypothesis (Hypothesis 1). As shown in Table 5, support actions before confinement were relatively robust, with around two-thirds living with someone and over three-quarters having at least one of the four relational groups in their core discussion network. Following release, the proportion of individuals receiving support was lower across multiple relationships for both support actions. Large declines were seen for individuals living with parents and having partners in their core network.

The comparison of support after confinement by preconfinement support status further illustrates the large declines in receiving specific support for

Table 7. Postconfinement Support: Overall and by During-confinement Support (Visits).

		By During Support (Visits)		
Variable	Overall	No	Yes	Sig.[a]
Parent				
Live with	.24	.10	.33	***
Core network	.29	.20	.35	***
Combined support[b]	.44	.26	.56	***
Partner				
Live with	.22	.07	.39	***
Core network	.23	.09	.41	***
Combined support[b]	.33	.14	.56	***
Other family				
Live with	.17	.13	.22	*
Core network	.20	.15	.25	*
Combined support[b]	.33	.26	.39	**
Friend				
Live with	.04	.02	.05	
Core network	.25	.18	.29	**
Combined support[b]	.27	.18	.33	***
Across all groups[c]				
Live with	.51	.27	.53	***
Core network	.58	.47	.59	
Combined support[b]	.79	.61	.81	**

Note: $N = 476$.

[a]Statistical significance is reported from χ^2 two-sample tests, comparing postconfinement support by visitation status (0/1).

[b]Combined support is if either (or both) type of support is present.

[c]Across all groups indicates if any of the four groups visited. For all others, visits are from the respective relational group.

*$p < .05$.

**$p < .01$.

***$p < .001$.

those with it prior to confinement compared to the minimal increase for those without. For example, 42 percent of those who lived with parents prior to confinement did not after (58 percent remain, see Table 5) compared to 8 percent of those who did not live with parents before confinement but who did so after. Despite the net decline in social support from pre- to postconfinement, preconfinement support is consistently correlated with postconfinement support, with those having each type of support preconfinement more likely to also have it after (Hypothesis 2).

Table 8. Postconfinement Support Multiequation Probit Models (Seemingly Unrelated Regression Framework).

	(1) Combined			(2) Live With			(3) Core Network		
	Coef.	*SE*	Sig.	Coef.	*SE*	Sig.	Coef.	*SE*	Sig.
Panel A: Within-equation estimates									
Eq. 1: Parent									
During support[a]	0.565	.139	***	0.296	.182		.425	.140	**
Presupport[b]	0.584	.135	***	1.216	.177	***	.438	.128	**
Eq. 2: Partner									
During support[a]	0.670	.161	***	0.871	.169	***	.696	.165	***
Presupport[b]	0.946	.168	***	0.913	.173	***	.834	.164	***
Eq. 3: Other family									
During support[a]	0.294	.136	*	0.173	.182		.340	.143	*
Presupport[b]	1.047	.142	***	1.338	.198	***	.899	.152	***
Eq. 4: Friend									
During support[a]	0.466	.140	**	0.439	.288		.415	.138	**
Presupport[b]	0.470	.135	**	0.716	.382		.467	.135	**
Panel B: Across-equation estimates of error correlations (ρ)									
Parent–partner	−0.060	.091		−0.375	.131	**	.290	.093	**
Parent–other family	0.436	.076	***	0.595	.092	***	.425	.081	***
Parent–friend	0.208	.086	*	−0.114	.180		.384	.081	***
Partner–other family	−0.008	.095		−0.258	.126	*	.292	.095	**
Partner–friend	−0.067	.092		−0.129	.207		.162	.092	
Other family–friend	0.171	.089		0.010	.207		.333	.087	***

Panel C: Model statistics

	(1) Combined	(2) Live with	(3) Core network
Log likelihood	−959.34	−511.67	−890.36
Wald $\chi^2(df = 72)$	369.34	328.38	244.26
Prob. > χ^2	<.0001	<.0001	<.0001

Note: $N = 476$. Each equation included 16 additional controls covering demographics, preconfinement characteristics, criminal justice history, and confinement characteristics. See Appendix B in the Online Supplemental Material for models including full controls. Coef. = coefficient; Eq. = equation; *SE* = standard error; Sig. = statistical significance.

[a]During support variables are visits from the respective relational types in each equation (e.g., parent visits for parent support equations).

[b]Presupport variables are for lagged versions of the dependent variable for each equation (e.g., living with partner preconfinement for the living with partner postconfinement equation).

*$p < .05$.

**$p < .01$.

***$p < .001$.

Pre- and During-Confinement Social Support

Before testing the final hypotheses, we provide a description of during-confinement support. It was relatively common—as expected in the rehabilitation-focused Netherlands context—and consistently related to support preconfinement. Nearly all participants (89 percent) received a visit, with most also receiving calls, mail, money in their accounts, and other gifts in the first few months of confinement (Table 6). Except for calls and mail, every type of during-confinement support was more prevalent among those who received preconfinement support. The pre- to during-confinement support links held within specific relationships. For example, of detainees who either lived with or had parents in their core discussion network preconfinement, most had a visit from them (75 percent), while under half (44 percent) of those without parental support preconfinement had visits from parents. Because preconfinement support is consistently related to during-confinement support in bivariate tests, it is imperative to control for it when estimating the relationship between during-confinement support and later outcomes.

During- and Postconfinement Social Support

During-confinement support (receiving visits) is consistently related to receiving postconfinement support from each relational group (Table 7). For instance, over one-third (35 percent) of those who received visits from a parent during confinement have a parent in their core discussion network after confinement, compared to 20 percent for those who do not receive visits from a parent. Recall, receiving preconfinement support is also significantly related to receiving postconfinement support in bivariate tests (Table 5), highlighting the relevance of considering both time periods in multivariate models of postconfinement outcomes.

Building on the above findings, we proceed to the multiequation probit models to test the third hypothesis (Hypothesis 3). Results indicate some significant associations between during-confinement support (visits) and postconfinement support—after controlling for the significant relationship with preconfinement support (Hypothesis 2) and other individual controls (see panel A of Table 8). Receiving in-person visits was significantly related to combined postconfinement support from that same party (panel A model 1). Receiving visits was *only* significantly related to living with that party after release for partners (panel A model 2), while receiving visits from *each* of the four parties was significantly related to having that party in

the core discussion network after release (panel A model 3). The importance of during-confinement support on postconfinement expressive support is striking, as the relationship holds within each of the four provider parties when considering lagged support and other controls.

As models included preconfinement support—a strong, consistent predictor of support during reentry, we were not expecting many other control variables to be significantly related to postconfinement support (see Online Supplement Appendix B for models with coefficients for all controls).[11] Nonetheless, some significant patterns emerged in post hoc interpretations. Individuals with children were less likely to live with parents and more likely to live with partners, while the youngest individuals (18–23 years old at confinement) were more likely to live with other family members. These patterns are consistent with a life-course understanding of living arrangements based on family formation. Those with problem drug use were significantly less likely to live with parents, yet more likely to have parents in their core discussion network after release. Having more severe prior offenses was related to having parents in the core discussion network but decreased the likelihood of partners being in it.

Postconfinement Social Support Providers

We examine the error correlations from the multiequation probit models to test the final set of hypotheses predicting the interaction of social support providers (Hypotheses 4a and b). After controlling for the explanatory factors within each equation, postconfinement support is correlated across provider groups, suggesting simultaneous interactions. First, there is a substitution effect in instrumental support (Hypothesis 4a) as evidenced by the small negative correlation between parents and partners ($\rho = -.38$) and other family and partners ($\rho = -.26$; see panel B model 2 of Table 8). Conversely, there is a moderate positive correlation between the error terms for living with parents and other relatives ($\rho = .60$). This correlation suggests that releasees move into households with other relatives in addition to, rather than in lieu of, parents.

Second, there is an additive and dynamic interplay for provision of expressive support (Hypothesis 4b; panel B model 3). Even after controlling for the significant within-equation variables (i.e., having these parties in the preconfinement core discussion network and receiving visits from them during confinement), there is unexplained variance in having each party in the postconfinement core discussion network that is positively correlated with each other (except partner with friend). This implies there is a *social*

aspect to social support, in that connected individuals are connected through multiple relationships. This speaks to the importance of cumulative expressive support, not just from any single party.

Alternate Model Specifications

Although the methods used are appropriate, it is important to test the sensitivity of our findings to alternate model specifications. Therefore, we first tested interactions between pre- and during-confinement support because it is possible that visits have a stronger relationship with postrelease support for those without preconfinement support. However, interaction terms were not significant (see Online Supplement Appendix C). Next, we tested the sensitivity to hypothetical potential unobserved confounders (see Online Supplement Appendix D) and modified the main models—adding controls (having a partner preconfinement; an extraversion scale) and removing cases (those without living parents preconfinement; $n = 50$). These adjustments were made because our selection on observables design leaves open the possibility for omitted variable bias and widely different estimates across the models could suggest that significant main model findings were statistical anomalies. However, the significant results from our main models were largely robust to the alternate specifications—reinforcing our interpretation of the main model findings.

Discussion

The concept of social support, which is intrinsic to many criminological theories, has recently drawn more attention from policy makers and researchers attempting to understand the collateral consequences of confinement. Although reentry research has consistently shown social support as critical for meeting the needs of those leaving confinement (e.g., Harding et al. 2017; Martinez and Christian 2009; Martinez and Leverentz 2014; Western et al. 2015; Wyse et al. 2014), criminological research on how social support changes around periods of confinement is limited. There is the expectation that incarceration, whether short or long, should negatively impact social support to some degree. Nevertheless, many prisoners maintain contact with external ties during confinement and, for some, this has been linked to postconfinement support (Barrick et al. 2014; Brunton-Smith and McCarthy 2017; La Vigne et al. 2005; Mowen and Visher 2016). However, the influence of preconfinement support has largely been absent from research, although it likely impacts both during and postconfinement

support, raising the concern that the impact of prison visits on outcomes may be overestimated in many prior studies. The present study addresses this gap and extends empirical knowledge of the mechanisms of social support in a short-term, resocialization-focused confinement context. Further, we depart from general measures of support common in the extant literature, to narrow, but deepen, the focus to the provision of specific support actions through meaningful relationships over time.

General instrumental support decreased from pre- to postconfinement, while general expressive support increased, partially in line with our first hypothesis (Hypothesis 1) that social support would decline. However, prior work has found that ratings of available family expressive support increased from pre- to postprison (La Vigne et al. 2005). Beliefs about support during reentry may be related to overall hopefulness and other factors outside of support received. The general support scales showed a consistent link between pre- and postconfinement support (consistent with Hypothesis 2) but a tenuous relationship between during and postconfinement support (counter to Hypothesis 3). It appears that receiving visits during confinement, when not tied to specific relationships, is not strongly related to general postrelease support.

When focusing on support received across the four relationships, we find that more individuals lose, rather than gain, instrumental and expressive support from pre- to postconfinement. This pattern is in line with our first hypothesis (Hypothesis 1) and also consistent with expectations from the literature that suggests confinement (e.g., Nagin, Cullen, and Jonson 2009) or major life transitions (Levitt and Cici-Gokaltun 2011) are detrimental to social support.[12] Nevertheless, some individuals without support preconfinement report having it after, meaning that there can be changes in both directions (e.g., Brunton-Smith and McCarthy 2017; Mowen and Visher 2016). Despite the overall reduction in support received following confinement, preconfinement support was correlated with postconfinement support across nearly every support provider and type—consistent with Hypothesis 2, as well as convoy (Antonucci and Akiyama 1995) and social expectations (Levitt and Cici-Gokaltun 2011) models from the life-span and social support literature. Unsurprisingly, preconfinement support is also correlated with during-confinement support: Those who had support from each party preconfinement were more likely to receive visits from them. This is similar to recent work linking preconfinement relationship quality to receiving visits (Atkin-Plunk and Armstrong 2018).

Our third hypothesis regarding the relationship between during-confinement support (visits) and postrelease support received partial

support. After controlling for preconfinement support, only visits from partners had a unique association with living with that party after release. However, receiving visits was consistently associated with postconfinement expressive support across all four provider groups, suggesting that ongoing contacts are beneficial for maintaining emotionally supportive relationships whether they be ascribed (e.g., parents) or optional (e.g., friends; Antonucci and Akiyama 1995). These results contrast with Atkin-Plunk and Armstrong (2018) who find that visits do not uniquely contribute to recidivism after controlling for the significant impact of preconfinement relationship quality. This comparison emphasizes the value of examining consequences of confinement broadly. Ongoing support in the form of visits may be related to some key outcomes, like housing and emotionally supportive relationships, but not others (like additional contact with the criminal justice system).

We also examined the interrelationship of postconfinement support provider groups. This is a noteworthy contribution because only one longitudinal study, to our knowledge, has examined the dynamic relationship between support providers after confinement. Pettus-Davis and colleagues (2017) found that increases in family (mostly expressive) support corresponded with decreases in nonfamily support and vice versa. In examining more precise forms of support received through relationships, we found that parents and partners substitute for each other when providing instrumental support (partially supporting Hypothesis 4a). Living with parents and living with other family after release were positively correlated, suggesting that those parents who provide housing to returning individuals often host multiple family members. Shared households with multiple family members may provide releasees with additional sources of support—or, they may represent thinly stretched resources if only a few members of the household are contributing to the whole. Future research should further examine reciprocity between releasees and other individuals in their shared households (see Braman 2004).

Finally, we observed a positive relationship across provider groups for expressive support, consistent with the final hypothesis (Hypothesis 4b) and prior work on prisoner social ties (Naser and La Vigne 2006; Volker et al. 2016). Releasees who had one type of support provider in their core discussion network were also more likely to have others—even after controlling for prior support and other individual differences (including a scale of respondent extraversion in supplemental models). Our findings suggest that expressive support has a concurrent, cumulative nature for releasees who remain socially connected.

Study Strengths

Our key findings about the importance of both pre- and during-confinement social support on receiving postrelease support through relationships extends the existing literature in several ways. First, we provide one of the first estimates of the unique influence of during-confinement support net of preconfinement support by utilizing three temporally distinct waves of data (see also Brunton-Smith and McCarthy 2017). We also assess the robustness of this finding to alternate model specifications, with results generally supporting the argument that prison visits are not merely an extension of preconfinement support (e.g., Bales and Mears 2008; Duwe and Clark 2013). We focus on specific types of instrumental (live with) and expressive (discuss important matters) support received from four potential support provider groups: parents, partners, other family, and friends. Prior research has typically conceptualized support as a broad entity, instead of as transactions between persons (Antonucci 2001; Vaux 1988). In our examinations of general support (using scales similar to the extant literature), visits were not related to postrelease support. However, when we examine visits and specific support actions through relationships, many significant links emerge. Lastly, by studying individuals in both remand centers and penitentiaries in the Netherlands, we show how social support operates around shorter periods of confinement in a system considered "model" for U.S. practitioners who want to promote resocialization and reentry (Subramanian and Shames 2013). With average stays under a year, individuals in our sample still experienced significant reductions in support. Incarceration need not be long (Comfort 2016; Maruna 2016; Weisheit and Klofas 1989) or particularly punitive to negatively impact social support. When encouraging loved ones to participate in reentry (e.g., Bobbitt and Nelson 2004), practitioners should enhance access to visitation as an effective conduit for maintaining expressive support *and* build other opportunities for brokering access to instrumental support through existing networks—even when individuals are confined for just a few months.

Study Limitations

Despite its contributions, this study—as any—also has limitations. The primary limitation is the potential for endogeneity. Despite the inclusion of lagged DVs and multiple theoretically germane controls, the observed relationship between during- and postconfinement support may be spurious. Simulations for a potential unobserved confounder show that parent visits

on expressive support are most susceptible to attenuation (see Online Appendix D). Acknowledging the difficulty in designing causal models for estimating the impact of social support, future research should consider additional relevant confounders to include as controls. A second concern is panel attrition. The final analytic sample with data at three waves was substantially reduced from the original Prison Project panel sample. Although our subsample may vary in meaningful ways on unmeasured characteristics, it is heartening that it is similar to the original pool of participants on measured variables, with the exception of length of confinement (which was by design to measure during-confinement support). Generalizability to other contexts is also a limitation. This sample is entirely male and domestic-born (the Netherlands), raising questions about how findings may extend to females or those serving time outside their country of origin. Generalizability to vastly different correctional settings (e.g., those with long sentences, geographically remote facilities, or especially punitive milieu) is also unknown.

Lastly, we traded breadth for depth in our operationalization of the DVs by utilizing exemplar measures of received instrumental (living with) and expressive (core discussion network) support. This focus allowed us to link enacted support (Barrera 1986) through specific relationship types (parents, partners, other family, friends) and visits from those same parties. We also examined support as a general scale as a point of departure from the extant literature. During- and postconfinement general support were not statistically significantly related after considering preconfinement support and full controls. When we focused on relationships as the conduit for support, visits were consistently linked with having the same party in the postrelease core discussion network, while only partner visits linked with living with that party after release. More research should examine how various relationships can be utilized to maximize support for releasees. Similarly, our focus on dichotomous DVs barred us from examining amount of support or contextual features (e.g., such as quality of or satisfaction with). Additional exploration of how confinement is related to these aspects, rather than presence, is warranted. That said, we do not know of any study that has examined specific forms of received support through relationships before, during, and after confinement.

Policy Implications

This study provides evidence of reductions in support following relatively brief confinement. Corrections officials should assess available support at

intake to determine which individuals may be least able to rely on informal networks at release. Our results also showed that in-person visits contributed to expressive support after release across all relationship types. As expressive support has been noted to counter prisonization (Western et al. 2015) and stigma (Harding et al. 2017) following incarceration, using visits to grow and maintain this type of support could be a useful strategy. However, only partner visits were related to living with that party after release. For the most pressing instrumental needs (e.g., housing, transportation), reentry planning should include formal services for those that will not be accessed through informal networks. Several U.S. jurisdictions have attempted to emulate resocialization policies from the Netherlands system (Subramanian and Shames 2013) and facilitate informal family support (Bobbitt and Nelson 2004). These efforts have encountered sundry challenges, which can be used to inform future support-focused interventions. One lesson, relevant to our findings, is the need to define family broadly (including even friends and mentors) if the aim of the intervention is to "cultivate a network of support" (Bobbitt and Nelson 2004:5).

Our findings also have direct implications for current visitation policies. Many states have restrictions on both the number of and type of people who can visit prisoners (Boudin, Stutz, and Littman 2014). Our results do not support these limitations. Relatedly, visitation rights in the Netherlands are for one hour of weekly visitation in both remand centers and penitentiaries with up to three unique individuals. This may limit the variety of persons who can visit together due to conflicting schedules and other logistics, ultimately limiting potential sources of support. Policies that are flexible on timing and access could theoretically open the possibility for alternate support providers. Encouraging and promoting in-person contacts between detainees and external social ties will likely pay dividends in postrelease support, with the expectation that these supports ultimately foster successful reentry.

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Supplemental Material

Supplemental material for this article is available online.

Notes

1. Qualitative accounts of support during and after confinement have better described actual helping actions through specific relationships such as partners (e.g., Comfort 2009) or kin (e.g., Braman 2004).
2. Visitation rates range widely across U.S. prison facilities, with some studies reporting very low rates (e.g., 24 percent; Cochran 2012) and others relatively high (e.g., 76 percent; Liu et al. 2016). This is due in part to the wide latitude given to prison administrators by the U.S. Supreme Court to regulate visitation (Boudin et al. 2014).
3. Description of the larger samples and replicated results for pre- to postconfinement support for the $n = 946$ sample are in Online Supplement Appendix A. Results are comparable to Tables 2 and 5. See Dirkzwager et al. (2018) for a description of how participants were similar to the target population, with the exception of time served (as most not contacted were already released at P1). That paper also describes the extensive efforts taken to contact those qualifying for follow-up waves and descriptions of respondents, nonrespondents, and not-contacted persons.
4. α for the expressive scale was above .75, while α for the instrumental scale was below .25 which is indicative of this measure being a composite of *different* types of material help rather than a latent construct.
5. Other family included in-laws, (step-)siblings, grandparents, and others. Children were intentionally excluded as most of the sample was under age 30 and children would likely not represent sources of social support (although they may motivate releasees or provide alternate roles). Of the included categories, siblings were the most common.
6. Items included P1: Other than yourself, out of which other people does your household exist? When you were arrested, what was your residential situation? Where did this person live prior to your arrest? Where did your partner live prior

to your arrest? R1: With who do you live in this house? What is your current living situation? Do you currently have a partner (responses indicating cohabitation)? Responses were checked against the item "Did(D1)/do(R1) you live alone in this house?" In the few instances of discrepancy, individuals who indicated living alone on this final item were not included in the "living with" indicators.

7. Qualitative descriptions of reentry households include both support and conflict (e.g., Braman 2004; Comfort 2009) in the same way that prison visits may be concurrently positive and negative (Meyers et al. 2017; Turanovic and Tasca 2017), As noted by an anonymous reviewer, some prisoners may not be able to live or associate with certain persons after release if it is detrimental to their reintegration (e.g., too much conflict, antisocial influence). Unfortunately, we are unable to measure these elements.
8. We also conducted additional analyses removing those without any network data ($n = 129$: 48 missing only P1, 52 missing only P2, 29 both). Results from this smaller sample ($n = 347$) were substantively similar to the findings on the analytic sample ($n = 476$) and available from the authors upon request.
9. These results were consistent when the sample was restricted to cases with network module data (the source of the "borrow cash" items; $n = 347$). Results are available from the authors upon request.
10. Results for models 1a–4a were not substantively changed when sample was restricted to those who reported network module data ($n = 347$). Models 1a–4a were replicated with Poisson models with similar results except during support failed to reach statistical significance in model 3a. Models 1b–4b were replicated in general linear models with log link due to left skew of the dependent variable (DV); results were not substantively changed. Alternate model results are available from the authors upon request.
11. Online Supplement Appendix B also compares the multiequation (seemingly unrelated regression) models to individual probit and partial models (bivariate, lagged-DV only, controls only). Estimates of the relationship between visits and postconfinement support is attenuated when controls, preconfinement support, or both are added to the models.
12. Although the patterns are consistent, we are not directly testing whether confinement is detrimental (or destructive) to social support. For that analysis, we would need to examine social support across time for a comparison group of individuals who are crime-involved but do not receive a term of confinement. We thank an anonymous reviewer for raising this point.

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